

Periscope.

65. UEBER DIE LEITUNGSBAHNEN UND PATHOGENESE DER RINDENEPILEPSIE (Concerning the Conducting Tracts and the Pathogenesis of Cortical Epilepsy). Johann Prus (Wiener klin. Wochenschrift, 38, 1898, p. 857).

Prus has made over a hundred experiments on dogs to determine the nature of cortical epilepsy.

The cortical epilepsy does not become generalized by the irritation extending throughout the cerebral cortex, similar to the formation of concentric waves following the falling of a stone into water, as Unverricht believed; and Unverricht's "irradiation law" is incorrect. When the cortical centers of certain muscles were extirpated, these muscles participated in the general convulsions after other parts of the cortex were strongly irritated, and removal of almost an entire hemisphere did not prevent bilateral convulsions. When a glass tube of about 2 cm. in diameter was driven into the motor area of the brain, and the cortex so enclosed was irritated, a general convulsion followed, although the irritation could not be transmitted through the glass wall.

Prus' experiments seem to prove that division of both pyramidal tracts in dogs, at any level, does not prevent general convulsions from irritation of either cerebral hemisphere. The pyramidal tracts, therefore, have no part in the generalization of the cortical epilepsy.

Prus found that when he cut through the midbrain at the level of the posterior quadrigeminal bodies, without involving the pyramidal and pontile tracts in the crusta, he could not produce epileptic attacks, even by the strongest irritation of the motor cortex, although he could produce spasm of the muscles whose centers were irritated, but only during the time the electrode was applied. The tracts, therefore, which convey the irritation necessary for the production of epileptic convulsions are not the pyramidal, or the other tracts in the crusta, but are "extrapyramidal" tracts, and they pass through the tegmentum or substantia nigra of the mesencephalon.

Prus found that electrical irritation of the motor cortex, after it had been painted with a ten per cent. solution of cocaine, did not produce epileptic convulsions, although it did cause spasm of the muscles represented in this area, and of all other muscles of the body when the current was sufficiently strong; these spasms ceased, however, as soon as the electrode was removed. No loss of consciousness was produced under those conditions. Bilateral epileptic convulsions could be obtained when the electrical irritation was applied to the motor area of the hemisphere which had not been painted with cocaine, provided the attempt was made soon after the application of the drug. The anesthetic applied to one hemisphere affected both after a time, and epileptic convulsions could not be obtained by irritation of either hemisphere. These experiments, Prus thinks, prove that sensory fibers, especially their end ramifications, are present in the motor areas, and that the end ramifications of the sensory fibers or the sensory ganglion cells of the cortex—and not the motor cells or the motor fibers of the cortex—give origin to the cortical epilepsy.

Motor "extrapyramidal" tracts undoubtedly exist. Prus cut com-

pletely both pyramidal tracts in the anterior pyramids, or in the cerebral peduncles—in the latter case cutting also the so-called pontile tracts of the crusta—after he had anesthetized the motor cortex, and he then obtained contraction of the muscles by cortical irritation with the faradic current. He believes he has demonstrated the existence of motor “extrapyramidal” tracts and of their decussation in the medulla oblongata, because he prevented all reflex action by the anesthetization of the cortex, and because the muscular contractions could not have been caused by way of the pyramidal or pontile tracts. He believes also that the “extrapyramidal” tracts are for associated movements; for example, he obtained extension of the foreleg on the side opposite to, and of the fore and hind legs, on the same side as the irritated anesthetic cortical area, after he had cut both pyramidal tracts. This he regards as an associated movement.

Prus found also that when he cut one-half of the midbrain just behind the posterior quadrigeminal bodies, and then irritated the cerebral cortex of the same side, he was able to obtain bilateral epileptic attacks. When he further cut one-half of the lower portion of the medulla oblongata, or of the spinal cord, on the side opposite to the injured half of the midbrain, he was still able to obtain bilateral epileptic convulsions from cortical irritation. These experiments showed that the epileptic attacks became general by means of the gray matter of the midbrain, medulla oblongata and spinal cord.

There is no special epileptic center, and there is no essential difference between cortical and “genuine” epilepsy. SPILLER.

66. *UNTERSUCHUNGEN ÜBER DIE FEINERE STRUCTUR DER NERVENZELLEN UND IHRER FORTSÄTZE* (Investigations of the Finer Structure of the Nerve Cell and its Processes). Vladislav Ruzicka (Archiv. f. Mikroskopische Anatomie und Entwicklungsgeschichte, 53, 1898, p. 485.)

The author presents the following conclusions:

(1.) The Nissl bodies are not performed in the living nerve cell. They are artefacts, not produced, as maintained by Held, by acid fixatives, but by the process of decolorization.

(2.) The anterior horn motor cells of the ox and dog do not possess throughout, a parallel striped protoplasmic structure. This arrangement, when it exists, cannot be held to be characteristic for a motor-acting cell.

(3.) The nerve cells of the spinal cord may be united to one another by anastomoses.

(4.) The nerve cells of the spinal cord send out fine processes from their surfaces which pass into the surrounding tissues.

(5.) The larger dendrites as well as the finer processes of the nerve cell probably act in some anabolic capacity. JELLIFFE.

67. *BEITRÄGE ZUR HISTOPATHOGENESE DER TABESCHEN HINTERSTRANGDEGENERATION* (Contributions to the Histopathogeny of the Tabetic Degeneration of the Posterior Columns.) Karl Schaffer (Deutsche Zeitschrift für Nervenheilkunde, 13, 1898, p. 287).

Schaffer says that the cases of incipient tabes, especially the cases of general paralysis with involvement of the posterior columns, show a degeneration of areas exactly corresponding to those which have been observed in the fetus, and he believes that the tabetic degeneration is confined in its early stages to the embryonal fiber systems of Flechsig and Trepinsky. The study of degeneration of isolated pos-